

REMARKS

Claims 6, 8, 11, 13, and 14 are pending in the application. Claims 6 and 11 have been amended, and new claim 14 has been added by the present amendment. The amendments are fully supported by the specification as originally filed.

Applicant's claimed invention is directed to a ball grid array (BGA) package including an electrically-conductive bridge. As amended, claims 6 and 11 require the electrically-conductive bridge to be either a bonding wire or a chip resistor that is mounted to span in an overhead manner across a continuous electrically conductive trace, the trace connecting a corresponding via and bond finger. In particular, the alleged "product by process" limitations of mounting "through wire-bonding technology" or "through SMT technology" have been canceled from claims 6 and 11. New claim 14 specifies that first and second traces (e.g., 70' and 70" in FIG. 6) connect the bridge to the corresponding via and bond finger, respectively.

Claim 6 was rejected under 35 USC 103(a) as being unpatentable over "Applicant's Prior Art Figures 3 and 4 (APAF)" in view of Japanese Publication 60-157238 to "Takahama". Claim 8 was rejected under 35 USC 103(a) as being unpatentable over APAF in view of Takahama, and further in view of U.S. Patent 3,560,256 to Abrams. Claims 11 and 13 were rejected under 35 USC 103(a) as being unpatentable over APAF in view of Takahama and Abrams. These rejections are respectfully traversed.

As indicated in the Final Office Action of 10/06/2004, prior art FIGS. 3 and 4 do not teach or suggest the electrically-conductive bridge recited in claims 6 and 11.

The Takahama reference fails to remedy the deficiencies of APAF. Because of structural differences between APAF and Takahama, one of ordinary skill in the art would not have any reasonable motivation to combine the references. Applicant's arguments in the response filed on July 23, 2004 are incorporated by reference herein.

In the Final Office Action, it was stated: "Takahama was only cited to show the bridge spanning in an overhead manner across an electrically conductive trace and having an unfilled gap" (page 6, last paragraph).

However, APAF and Takahama, whether taken alone or in combination, do not teach or suggest an electrically-conductive bridge as a bonding wire (or a chip resistor) that is mounted to span in an overhead manner across an interposing electrically-conductive trace such that the bonding wire (or chip resistor) is free of interference with the interposing trace and an unfilled gap is formed between the bonding wire (or chip resistor) and the interposing trace.

Takahama is directed to a method for fabricating a semiconductor device that provides connections between semiconductor elements within a limited space. In Takahama, semiconductor elements 4 and 5 are connected by either a jumper electrode 7 (see FIG. 2) or a thick aluminum wire (see FIG. 3). But there is no teaching or suggestion of an electrically-conductive bridge mounted to span in an overhead manner across an interposing electrically-conductive trace, or an unfilled gap formed between a bonding wire/chip resistor and the interposing trace.

Moreover, the proposed combination of APAF in view of Takahama is based on impermissible hindsight reasoning gleaned from knowledge of the Applicant's specification. As discussed above, there is nothing in Takahama to teach or suggest an electrically-conductive bridge mounted to span across an interposing electrically-conductive trace. Instead, Takahama merely discloses semiconductor elements and electrodes that are connected by a jumper connection electrode or thick aluminum wires. One of ordinary skill in the art would not seek to incorporate the jumper connection electrode or thick aluminum wires of Takahama into APAF for the specific purpose of connecting vias and bond fingers, as recited in claims 6 and 11. Therefore, the proposed combination of APAF in view of Takahama simply does not teach or suggest the Applicant's claimed invention as recited in claims 6 and 11.

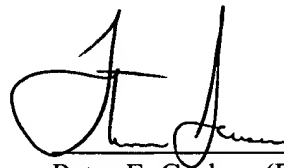
Regarding the rejection of claim 8, the combination of APAF in view of Takahama does not teach or suggest the Applicant's claimed invention, for at least the reasons discussed above. Abrams was further cited for teaching a bond wire made of gold or a bridge/crossover including a resistor. However, as discussed in the previous response, Abrams does not teach or suggest an unfilled gap formed between the bonding wire and the interposing electrically-conductive trace, as recited in claim 6.

Regarding the rejection of claims 11 and 13, for at least the reasons discussed above, the combination of APAF in view of Takahama does not reasonably teach or suggest the electrically-conductive bridge recited in claim 11.

New claim 14 is believed to be patentable over the combination of APAF in view of Takahama, for at least the reasons applicable to claim 6. Claim 14 further recites a first trace which connects one end of the conductive bridge to the via, and a second trace which connects the other end of the conductive bridge to the bond finger, which is not taught or suggested by the cited prior art.

It is believed the application is in condition for immediate allowance, which action is earnestly solicited.

Respectfully submitted,



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